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TITLE: SEMICONDUCTOR DEVICE AND FABRICATION THEREOF

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ABSTRACT:

PURPOSE: To deposit SiO<SB>2</SB> having low dielectric constant and low hygroscopic degree through application of a plasma CVD using an organic silane gas containing fluorine as a constitutive element.

CONSTITUTION: An Si substrate 21 is set in the chamber of a parallel plate plasma CVD system and heated and then TEOS, O<SB>2</SB> and NF.

gases are introduced simultaneously as a source gas at predetermined flow rates and pressures. RF power is then applied to the electrodes to cause discharge thus depositing SiO<SB>2</SB> by 500nm on the Si substrate 21. Subsequently, an Al film is deposited by 400nm by DC magnetron sputtering and patterned to form a first layer Al wiring 23. Similarly, SiO<SB>2</SB> is deposited by 800nm and a second layer Al wiring 25 is formed followed by deposition of SiO<SB>2</SB> 26 by 800nm. When the films are deposited within a range where various conditions are satisfied, SiO<SB>2</SB> added with F having low dielectric constant and low hygroscopic degree can be deposited regardless of the kind of source gas.

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